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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,395	05/04/2005	Kazauko Fujii	2005_0320A	3251
513 7590 05/25/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER MOORE, MARGARET G	
			ART UNIT 1712	PAPER NUMBER
			MAIL DATE 05/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/526,395

Applicant(s)

FUJII ET AL.

Examiner

Margaret G. Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 to 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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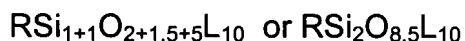
1. Claims 1 to 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what is embraced by the instant claims.

First it is unclear what weight and limitation is to be given to the term "layered". As currently read the instant claims are simply drawn to a siloxane polymer.

In addition, the formula shown in claim 1 is indefinite and seems to be structurally incorrect. As is known in the art, an Si atom in a siloxane normally has 4 bonds. This formula allows for " $1 + 1.5x + .5z$ " bonds. It is unclear what this means. In addition, since z is defined only as greater than 0, it appears that there can be an infinite, or more realistically, a large number of L atoms. This too is confusing.

Take, for instance, the scenario where "x" is 1 and "z" is 10. Such a formula would then be as follows:



Such a structure is not appear to be possible or, at the least, is quite confusing. It is also unclear if L is bonded to the O or Si atom. Clarification is required.

In addition, limiting "m" to 2 to 200 does not appear to carry any weight on the total size or molecular weight of the siloxane since there is no upper limit on "z" and "L" can be Si. There is no limitation on substituent groups on this Si atom.

In claim 2, it is confusing and seemingly contradictory to the definition of "thermoplastic" to include siloxanes that are liquid at room temperature. A thermoplastic substance will soften when heated and hardens or firms upon cooling. A siloxane that is liquid at room temperature will not "soften", nor will it "firm" or "harden" as it cools. The Examiner notes that the prior art generally refers to siloxanes as being in a liquid or thermoplastic state, not both.<sup>1</sup>

In claim 10, it is unclear what "A compact, shaped using the..." means.

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<sup>1</sup> See 2,486,162, column 3, lines 29 to 33; 2,676,182, column 2, line 6.

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2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 to 6, 9 to 12, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hyde.

Since it is unclear what is embraced by the formula in claim 1, as noted above, the Examiner will base this rejection on limitations resulting from the process by which the claimed siloxane is made.

Hyde teaches organosiloxanes that are liquids or thermoplastic resins. See column 3, lines 29 to 32. See for instance Example 2 in which a alkyl silane (meeting that in claim 4) and an alkoxysilane (meeting that in claim 5) are reacted with water and an acidic catalyst. This meets the claimed method of making the siloxane as found in claims 4 to 6. Since the processes are the same, it follows that the final products will be the same as well. Identical processes cannot result in different products. In this manner it follows that the products of claims 1 to 3 are anticipated by Hyde as well. Since Hyde discloses that the product can be liquid, it follows that it will have a melting temperature within the range of claim 2. Additionally, since products of identical composition cannot have different products, it follows that the products of Hyde will inherently decompose at a temperature greater than 300°C.

For claims 9 to 12, note that Hyde coats glass with the siloxane resin prepared in Example 2. For claims 14 and 15, note that all that is required by these claims is the siloxane per se. As such these claims are met by Hyde.

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5. Claims 1 to 4, 6 and 9 to 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Walmsley.

Walmsley teaches producing siloxane compounds that embrace thermoplastic and oily siloxanes. See column 2, lines 61 and on. This method comprises hydrolyzing an alkyl silane in a process meeting instant claim 4 and using a catalyst meeting claim 6. See for instance Example 15 which prepares a liquid siloxane. This will have a melting point within the claimed range. Since Walmsley also teaches various siloxanes that have melting points near 300<sup>0</sup>C (such as Example 8) they will obviously have to decompose at a temperature of greater than this.

For claims 9 to 15, see column 9 which teaches various uses for these polymers, including surface coatings and film formation. In addition, line 57 teaches that fillers can be added thereto. This meets the requirement of claim 13.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley.

While this reference teaches using ammonium compounds as a catalyst (generally on column 4, lines 11 to 27) it does not specifically teach the amount as claimed. Please see Example 14 which uses an ammonium catalyst in an amount of approximately 7 wt%.

On one hand, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. In the instant application, one would have expected these amounts to have comparable properties since in both instances the ammonium compound is present in a catalytic amount.

On the other hand, adjusting the amount of catalyst in an effort to determine the operable and/or optimum amount would have been well within the skill of the ordinary artisan. Generally, differences in concentration or temperature will not support the

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patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.

With regard to the temperature limitations, note that the prior art conducts the polymerization under reflux.

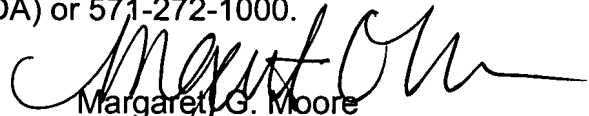
7. The Examiner cites various references as being of general interest. Daudt et al. teach a method of making thermoplastic siloxane resins. While the resins appear to be the same as that in instant claim 1, they are made by a different process. The Examiner has not cited this reference against the claims as it is no closer to the claims than the references that are cited above. WO 01/32760 teaches the polymerization of TEOS and an octadecylsilane (the silane shown by applicants in their working examples). See page 12. Nogami et al. and Zhong et al. also prepare siloxanes by the polymerization of TEOS and an octadecylsilane. These references also are no closer to the claims as those cited supra. The Examiner did not apply them against the claims at this time to avoid redundancy.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 571-272-1090. The examiner can normally be reached on Monday to Wednesday and Friday, 10am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Margaret G. Moore  
Primary Examiner  
Art Unit 1712

mgm  
5/23/07